**IN THE CLAIMS**

Cancel claims 1 and 21, and amend claims 2, 4-8, 12-14, 16, 19, 20 and 22 as follows:

1. (Canceled).

2. (Currently Amended) A scanning probe microscope ~~as set forth in claim 1, wherein:~~

~~said actuator is comprised of a single piezoelectric element;~~

~~said approaching and separating means is an approaching and separating supplier for outputting a periodic pulse signal for approach and separation; and~~ comprising:

a cantilever having a probe close to a sample surface;

a single piezoelectric element provided with the cantilever for changing a distance between said probe and said sample;

a displacement detection system for detecting displacement of said probe; and

a servo controller outputting a control signal for controlling the operation of said actuator based on a detection signal output by the displacement detection system

and a signal relating to a reference distance and holding a distance between said probe and said sample at said reference distance in measurement at a sampling position;

wherein said probe scans said surface to measure said surface while holding the distance between said probe and said sample at said reference distance at each of a plurality of said sampling positions;

said scanning probe microscope further comprising;

an approaching and separating supplier for controlling the operation of said piezoelectric element so as to make said probe approach to the sample surface for measurement at each of said sampling points and then make said probe separate from the sample surface, which outputs a periodic pulse signal for approach and separation;

wherein said periodic pulse signal from said approaching and separating signal supplier is added to said signal relating to the reference distance produced by said servo controller; and

wherein the state of the servo control by said servo controller is continued at least when said probe is made to approach the sample surface and during measurement at said sampling points in order to quickly perform wide measurement defined by a millimeter-class scan area.

3. (Original) A scanning probe microscope as set forth in claim 2, further comprising a displacement meter for measuring an amount of displacement due to expansion and contraction of said piezoelectric element.

4. (Currently Amended) A scanning probe microscope ~~as set forth in claim 1, wherein:~~ comprising:

a cantilever having a probe close to a sample surface;

an actuator provided with the cantilever for changing a distance between said probe and said sample;

a displacement detection system for detecting displacement of said probe; and

a servo controller outputting a control signal for controlling the operation of said actuator based on a detection signal output by the displacement detection system and a signal relating to a reference distance and holding a distance between said probe and said sample at said reference distance in measurement at a sampling position;

wherein said probe scans said surface to measure said surface while holding the distance between said probe and said sample at said reference distance at each of a plurality of said sampling positions;

said scanning probe microscope further comprising;

an approaching and separating means for controlling the operation of said actuator so as to make said probe approach to the sample surface for measurement at each of said sampling positions and then make said probe separate from the sample surface; wherein

said actuator is comprised of a first piezoelectric element for normal measurement and a second piezoelectric element for extension and retraction;

a signal output from said servo controller is given to said first piezoelectric element; ~~and~~

a periodic pulse signal for approach and separation is given to said second piezoelectric element; and

the state of the servo control by said servo controller is continued at least when said probe is made to approach the sample surface and during measurement at said sampling positions in order to quickly perform wide measurement defined by a millimeter-class scan area.

5. (Currently Amended) A scanning probe microscope as set forth in claim ~~1~~4, wherein, when said actuator makes said probe approach to the surface of said sample for measurement at said sampling position, a separately provided auxiliary

movement mechanism makes said probe move in tandem at an equal speed in the same direction as the scan motion by said movement mechanism.

6. (Currently Amended) A scanning probe microscope as set forth in claim 4, comprising:

a movement mechanism for making said probe scan the sample surface over the millimeter-class scan ~~an~~ area;

wherein, when said probe scans said sample by on the operation of said movement mechanism and said second piezoelectric element makes said probe extend to the surface of said sample for measurement at said sampling position, said first piezoelectric element makes said probe move in tandem at an equal speed in the same direction as the scan motion by said movement mechanism and said first piezoelectric element functions as an auxiliary movement mechanism.

7. (Currently Amended) A scanning probe microscope as set forth in claim ~~1~~2, wherein:

said probe has an ~~a predetermined~~ aspect ratio more than 5 and said probe measures a surface with the ~~a predetermined~~ aspect ratio.

8. (Currently Amended) A method of measurement performed by a scanning probe microscope provided with a cantilever having a probe close to a sample surface, an actuator provided with said cantilever for changing a distance between said probe and said sample, a displacement detection system for detecting displacement of said probe, a servo controller for outputting a control signal for controlling the operation of said actuator and holding a distance between said probe and said sample at said reference distance in measurement at a sampling position based on a detection signal output by the displacement detection system and a signal relating to a reference distance, and a movement mechanism for making said probe scan the sample surface, and said method of scanning said surface by said probe to measure said surface while holding the distance between said probe and said sample at said reference distance at each of a plurality of said sampling positions,

further said method of measurement comprising:

a step of making said probe approach to the said sample and separate from said sample to obtain measurement data at

each of said sampling positions while continuing the state of servo control relating to the distance between said probe and said sample by said servo controller at least when said probe is made to approach the sample surface and during measurement at said sampling points in order to quickly perform wide measurement defined by a millimeter-class scan area.

9. (Original) A method of measurement of a scanning probe microscope as set forth in claim 8, further comprising a step of adding a signal used for said approach and separation to said signal relating to the reference distance in a control loop of said servo controller.

10. (Original) A method of measurement of a scanning probe microscope as set forth in claim 8, wherein;

said actuator is comprised of a first piezoelectric element for normal measurement and a second piezoelectric element for approach and separation;

a signal output from said servo controller is given to said first piezoelectric element; and

a periodic pulse signal for approach and separation is given to said second piezoelectric element.

11. (Original) A method of measurement of a scanning probe microscope as set forth in claim 8, wherein;

when said actuator makes said probe approach to the sample surface for measurement at said sampling position, a separately provided auxiliary movement mechanism makes said probe move in tandem at an equal speed in the same direction as the scan motion by said movement mechanism.

12. (Currently Amended) A method of measurement of a scanning probe microscope as set forth in claim 8, further comprising a step of making said probe scan the sample surface over the millimeter-class scan ~~an~~ area.

13. (Currently Amended) A method of measurement of a scanning probe microscope as set forth in claim 8, wherein;

a probe with an ~~a high~~ aspect ratio more than 5 is used as said probe and said probe measures topographic features with the ~~a predetermined~~ aspect ratio formed on a semiconductor substrate.

14. (Currently Amended) A scanning probe microscope comprising:

a probe close to a sample surface; and

a servo controller for holding a distance between said probe and the surface of said sample at a reference distance during measurement at a sampling position;

wherein said probe scans said surface to measure said surface while holding the distance between said probe and said sample at said reference distance;

said scanning probe microscope further comprising:

a movement mechanism for making said probe scan the surface of said sample over a millimeter-class scan ~~an~~ area;

an approaching and separating means for making said probe approach to the surface of said sample at said sampling position and make said probe separate from the surface of said sample during movement between sampling positions; and

an auxiliary micro-class movement mechanism for making said probe move in tandem at an equal speed in the same direction as the scan motion of said movement mechanism when making said probe approach to the surface of said sample for measurement at said sampling position.

15. (Original) A scanning probe microscope as set forth in claim 14, wherein said movement mechanism is a sample stage for carrying said sample and making said sample move in the scan direction in millimeter units of length.

16. (Currently Amended) A method of scanning performed by a scanning probe microscope provided with a probe close to a sample surface and scanning said surface with said probe to measure said surface while holding the distance between said probe and sample at a predetermined distance,

said method of scanning being performed for a ~~predetermined~~ millimeter-class wide measurement area at the sample surface, a plurality of scattered sampling positions are set in said millimeter-class wide measurement area, and scan motion by a millimeter-class movement mechanism is performed for measurement at each sampling point, and

said method of scanning is comprised of:

a step of making said probe separate from the sample surface during movement between sampling positions,

a step of making said probe approach to the surface of said sample for the measurement at each of said sampling positions, and

a step of causing scan motion for tandem movement at an equal speed in the same direction as the scan motion of said movement mechanism by an auxiliary micron-class movement mechanism when said probe approaches to the sample surface for measurement.

17. (Original) A method of scanning of a scanning probe microscope as set forth in claim 16, wherein said scan motion for tandem movement is performed for each sampling position.

18. (Original) A method of scanning of a scanning probe microscope as set forth in claim 16, wherein a reverse scan motion is performed each time a said scan motion for tandem movement ends.

19. (Currently Amended) A scanning probe microscope comprising:

a probe close to a sample surface;

a displacement detection mechanism for detecting displacement of said probe in a height direction with respect to the surface of said sample; and

a control circuit for control so as to hold a distance between said sample and said probe at said reference distance based on a detection signal output by said displacement detection mechanism and a signal relating to the reference distance; wherein

said probe scans said surface to measure said surface while holding the distance between said probe and said sample at said reference distance,

said scanning probe microscope further comprising:

a millimeter-class movement mechanism for making said probe scan the surface of said sample over a millimeter-class scan ~~predetermined~~ area;

a piezoelectric element for making said probe displace in a height direction of said sample with respect to said surface;

a reference distance setting means for giving a voltage signal determining said reference distance;

an approaching and separating signal supplying means for giving a periodic pulse voltage signal for making said probe approach to and separate from the surface of said sample;

a combining means for combining a voltage signal determining said reference distance and said periodic pulse ~~approach and separation~~ voltage signal; and

a subtracting means for calculating a difference between a voltage signal output by said combining means and said detection signal to output a differential signal;

wherein said control circuit generates a control voltage signal based on said differential signal and supplies said voltage signal to said piezoelectric element to control the approach and separation movement.

20. **(Currently Amended)** A scanning probe microscope as set forth in claim 19, wherein ~~which makes~~ said probe is made to approach to ~~and separate from~~ the surface of said sample at a sampling position for measurement while holding servo control in the height direction in order to quickly perform wide measurement defined by a millimeter-class scan area~~for measurement or holds it in a separation state when moving it from one sampling position to a next sampling position~~.

21. (Canceled).

22. (Currently Amended) A scanning probe microscope comprising:

a probe close to a sample surface;

a displacement detection mechanism for detecting displacement of said probe in a height direction with respect to the surface of said sample; and

a control circuit for control so as to hold a distance between said sample and said probe at said reference distance based on a detection signal output by said displacement detection mechanism and a signal relating to the reference distance; wherein

said probe scans said surface to measure said surface while holding the distance between said probe and said sample at said reference distance;

said scanning probe microscope further comprising:

a millimeter-class movement mechanism for making said probe scan the surface of said sample over a millimeter-class scan ~~predetermined~~ area;

a piezoelectric element for making a position of said probe in a height direction with respect to said sample surface match with said reference distance based on a servo control system at said sampling position; and

an approaching and separating means for making said probe approach to the surface of said sample at said sampling position and making said probe separate from the sample surface during movement between sampling positions;

wherein said probe is made to approach and separate to obtain data at said sampling position by said approaching and separating means at each of a plurality of sampling positions while continuing a servo ~~the~~ control relating to the distance between said probe and said sample based on said servo control system at least when said probe is made to approach the sample surface and during measurement at said sampling points in order to quickly perform wide measurement defined by a millimeter-class scan area.

23. (Original) A scanning probe microscope as set forth in claim 22, wherein said approaching and separating means includes a piezoelectric element.

24. (Original) A scanning probe microscope as set forth in claim 19, wherein said movement mechanism is a sample stage for carrying said sample and making said sample move in the scan direction in millimeter units of length.